LAND IMPROVEMENT AND CONTROL OF COMMON RUSH WITHOUT USING CHEMICALS

Ian Cairns

June 2016

Reversion of ‘improved’ marginal grassland – it’s a natural process!

- Over time, quality and productivity deteriorates
  - Drainage less effective
  - Increase in soil acidity
  - Nutrient levels fall
  - Productive sward less competitive (more weeds – e.g. common rush an indicator?)
- Less grass, less clover, lower silage yield, supports fewer LSU, slower stock growth rates
- Expensive to improve – economically viable return?

Maintaining/improving productivity

- What are your land management objectives?

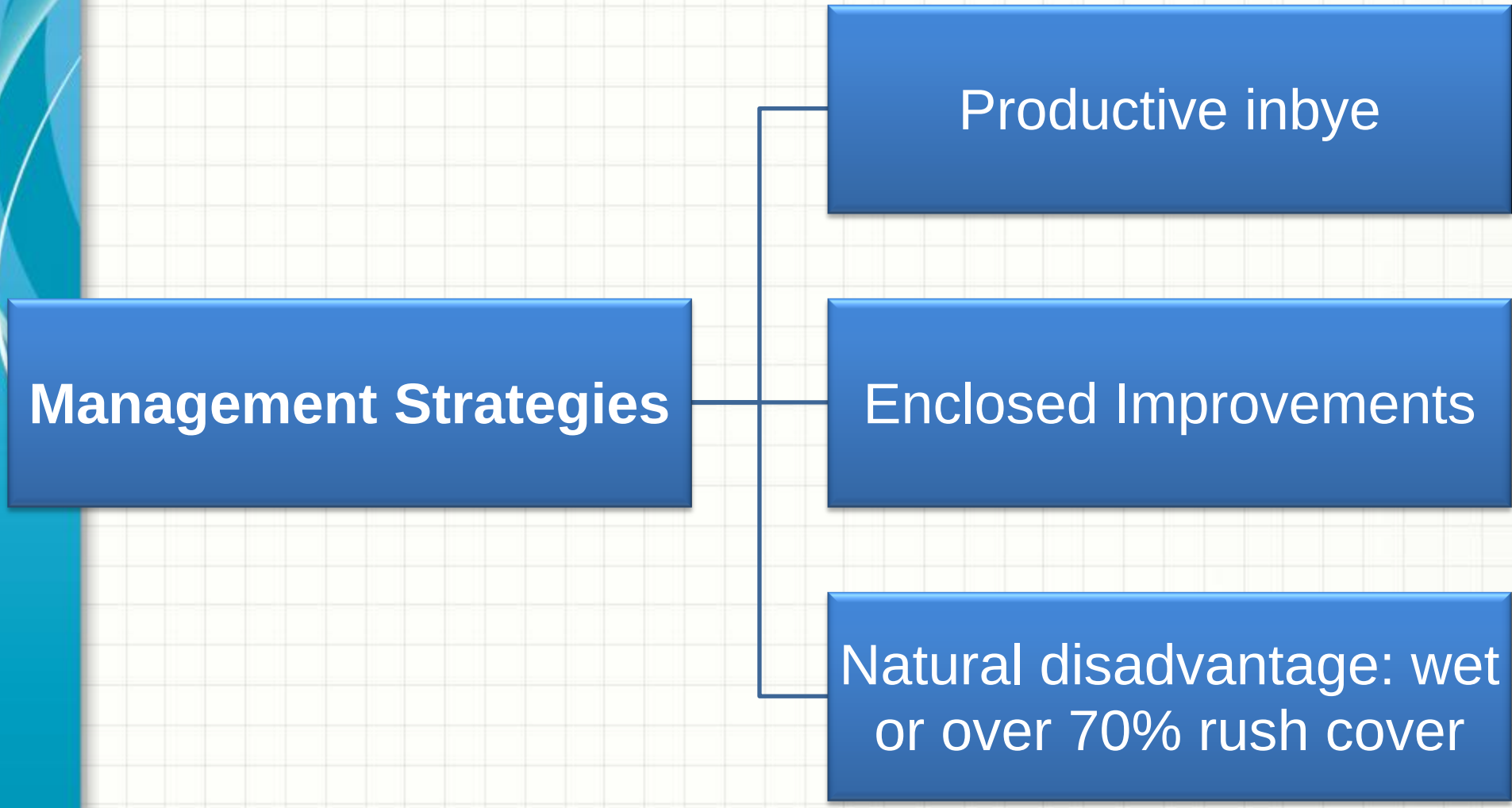
Before improvement consider:

1. Is permission required?
2. Habitat management under agri-environment schemes
3. Cost/benefit of improvement
4. Practicality of improvement
5. Living with *less productive fields/part fields*

Common Rush - Context

- Problem of permanent pasture & rough grazings - Greater problem in:
  - Poorly drained soils
  - High rainfall areas
  - Uncompetitive swards
- Dense, deep rooting clumps reduce grazing value of productive sward
- Huge volume of seeds produced – some lying dormant in the soil for decades
- Farm specific management strategy – driven by objectives

Land improvement strategy – marginal/crofting



Short term vs. long term control

Option	Benefits	Limitations
Baling and removing	Clean cut close to ground No trash on surface Use as bedding material?	Need stone free and level surface Too much soil damage in wet conditions
Chemical destruction	N/A	Prohibited in organic system
Topping & left in-situ	Low cost Equipment available to most farmers Window of opportunity in conjunction with frost?	Mulch remains Probably too much for rotary topper. Limited by stones, drains, uneven terrain
Burning	No trash remains Reduced rush seed viability Fertile ash	Habitat/wildlife damage Safety issues
Ploughing in		Too much trash to plough

Mechanical topping

4 stages

1. Graze hard to leave target weed standing above grass
2. Apply nutrients (if available/appropriate)
3. Top weeds at height above grass ‘crowns’
4. Use livestock grazing to manage the regrowth

Competition from sward

Soil Fertility & pH

Drainage

Role of good grazing management in weed control

- Avoid excess winter grazing
- Reduce risk of poaching (cross compliance issue in 2015)
- Reduce risk of winter kill in sward
- Graze hard in the late spring/summer (prevent dominant weed growth)*
- Cattle are better – less selective grazers and trampling (browsers are best!)
- Use topping for management in summer

Improving grass productivity

- Liming and fertilising alone

- Surface seeding
  - Direct drilling
  - Slot seeding
  - Tined harrow seeding
  - Broadcasting
- Reseeding – ultimate control strategy?
  - Deep Ploughing
  - Light surface cultivation and firming
  - Sowing competitive seed mixture
  - Rolling to consolidate

Reseeding? – points to consider

- Existing weed types and numbers
- Condition of existing grass sward
- Practicality of ploughing
- Soil pH and nutrients
- Time of year
- Soil moisture & temperature
- Grass seed mixture
- Post reseeding management

Example Upland Seed Mixture

Type	%
Hybrid Ryegrass	6.67
Early Perennial Ryegrass	10.00
Intermediate Perennial Ryegrass	13.33
Late Perennial Ryegrass AberBite (T)	41.33
Timothy	13.33
S S Meadow Grass	2.67
Creeping Red Fescue	6.67
White Clover	6.00

Drainage

- Some soil types more susceptible to problems
  - High content of clay
  - High peat content
  - Very deep or very shallow soils
- Damage to field drainage systems
  - Outfalls
  - Open drains
  - Clay and plastic systems
- Damage to soil structure
  - Poaching by livestock
  - Machinery & cultivation

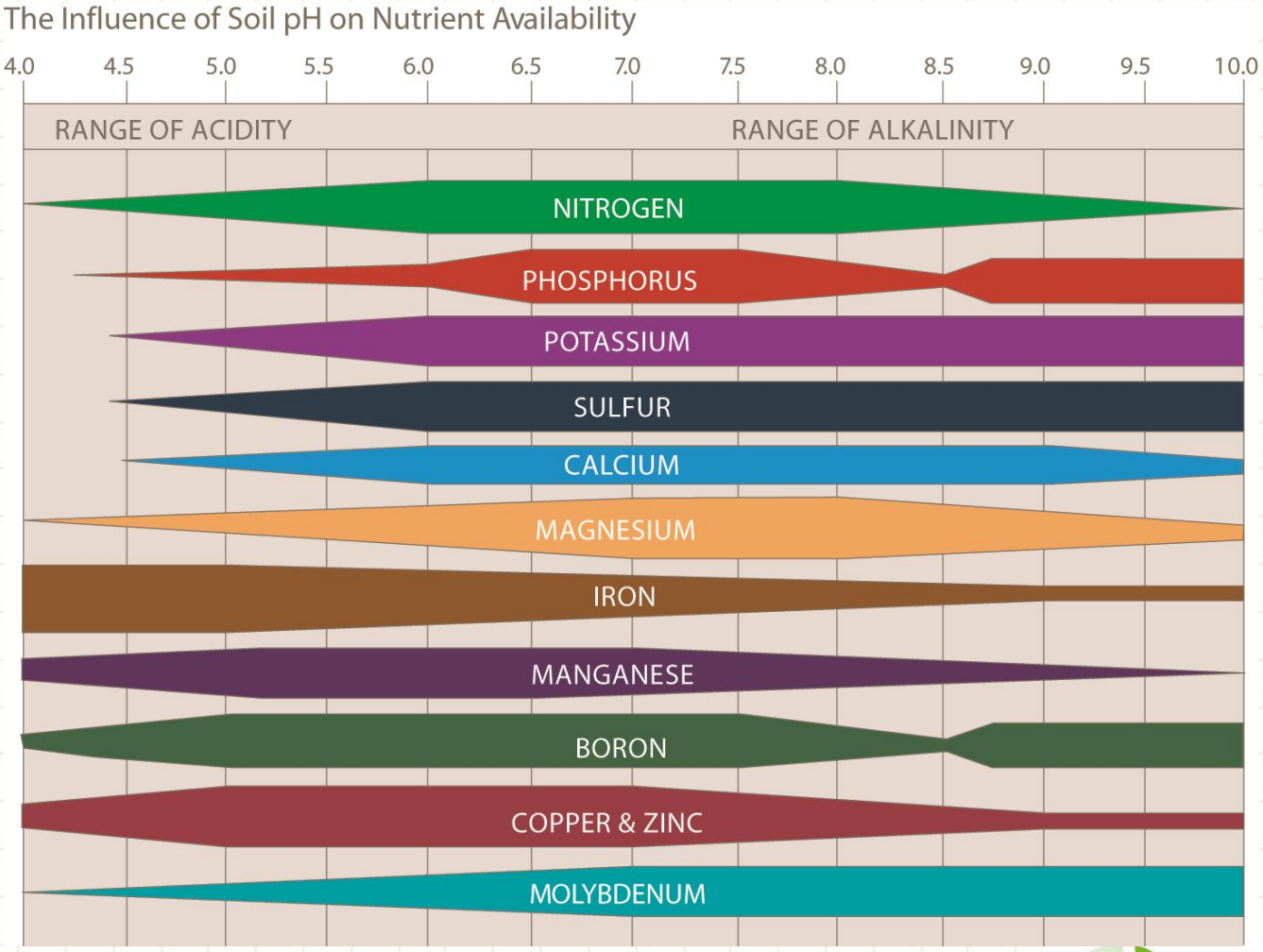
Soil fertility

Address underlying problems:

1. Soil acidity (pH)
2. Soil nutrient status (P, K, Mg)

Starts with soil analysis!

Nutrient availability in the soil



Lancrop Laboratories